

# TOPOGRAPHIC SURVEY

LOT 1, BLOCK FIVE, LEECK LAKE DEVELOPMENT PARK,  
SECTION 21, TOWNSHIP 142 NORTH, RANGE 31 WEST,  
CASS COUNTY, MINNESOTA

## CONTOUR INFORMATION

Contours shown have been obtained using standard survey topographic methodologies.  
Contour interval is 2 feet as shown on this drawing.  
Vertical Datum: NAVD88

### SURVEY INFORMATION

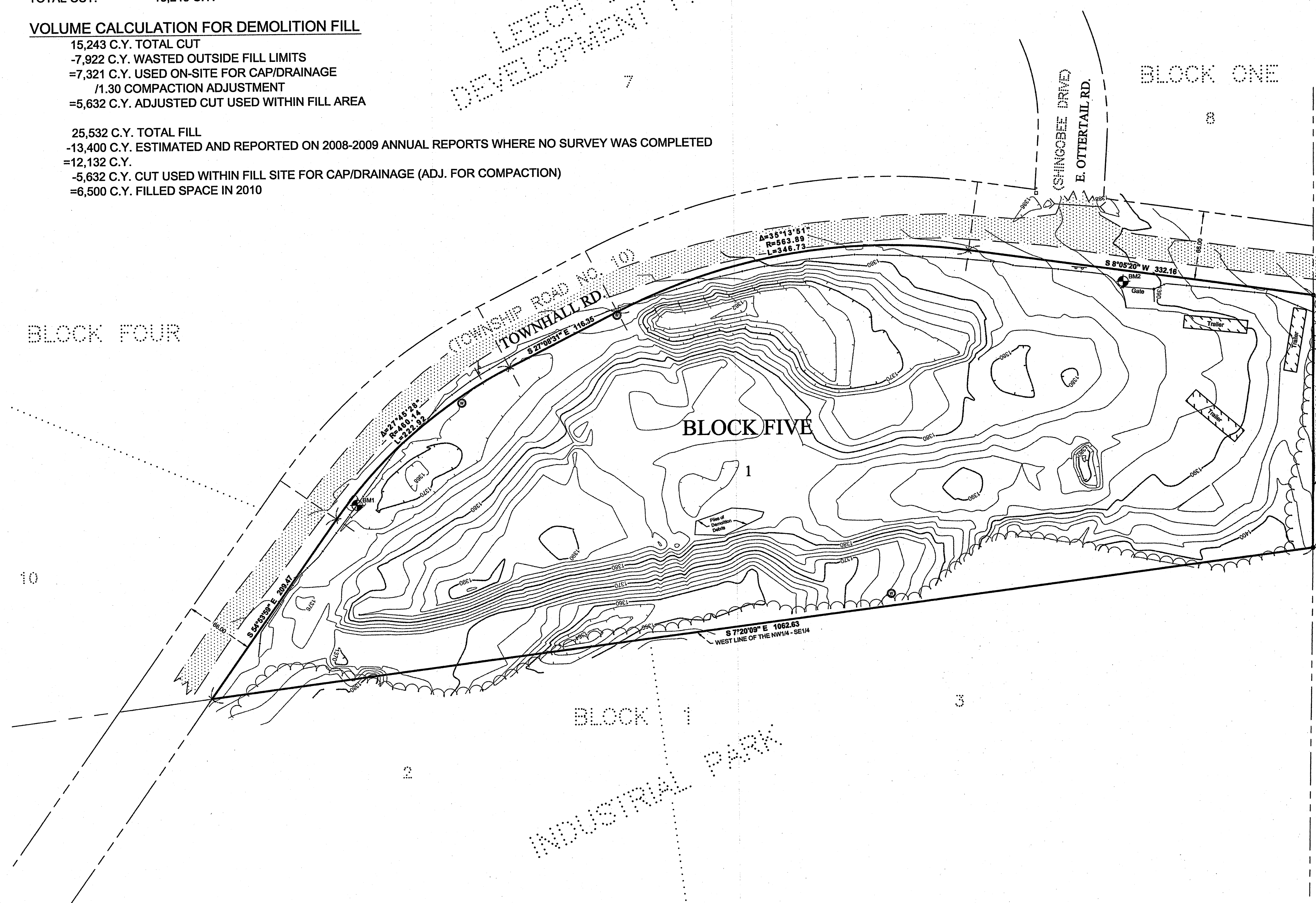
TOTAL FILL: 25,532 C.Y.  
TOTAL CUT: 15,243 C.Y.

### VOLUME CALCULATION FOR DEMOLITION FILL

15,243 C.Y. TOTAL CUT  
-7,922 C.Y. WASTED OUTSIDE FILL LIMITS  
=7,321 C.Y. USED ON-SITE FOR CAP/DRAINAGE  
/1.30 COMPACTION ADJUSTMENT  
=-5,632 C.Y. ADJUSTED CUT USED WITHIN FILL AREA

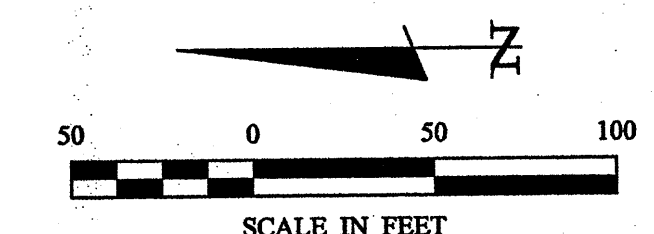
25,532 C.Y. TOTAL FILL  
-13,400 C.Y. ESTIMATED AND REPORTED ON 2008-2009 ANNUAL REPORTS WHERE NO SURVEY WAS COMPLETED  
=12,132 C.Y.  
-5,632 C.Y. CUT USED WITHIN FILL SITE FOR CAP/DRAINAGE (ADJ. FOR COMPACTION)  
=-6,500 C.Y. FILLED SPACE IN 2010

LEECK LAKE  
DEVELOPMENT PARK

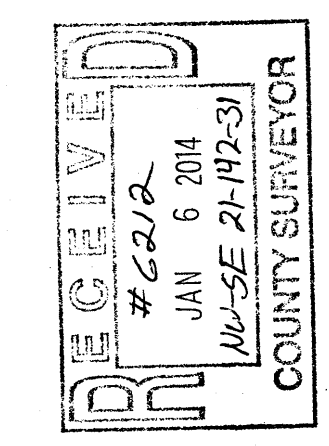


### LEGEND

- DENOTES MONUMENT FOUND
- × DENOTES CALCULATED POSITION
- 1208— DENOTES EXISTING INTERMEDIATE CONTOURS
- 1208- DENOTES EXISTING INTERMEDIATE CONTOURS (DEPRESSION)
- 1210- DENOTES EXISTING INDEX CONTOURS
- 1210- DENOTES EXISTING INDEX CONTOURS (DEPRESSION)
- DENOTES EXISTING FENCE LINE
- ▨ DENOTES EDGE OF EXISTING GRAVEL
- ⊙ DENOTES EXISTING WELL
- ⊕ DENOTES EXISTING SIGN(S)
- |— DENOTES EXISTING CULVERT LOCATION
- ⊞ DENOTES EXISTING PHONE PEDESTAL
- ⌒ DENOTES EDGE OF TREELINE
- BM1 DENOTES BENCHMARK: TOP OF BOTTOM HINGE BOLT IN NORTH FACE OF GATE POST. ELEV. = 1375.28 NAVD 88
- BM2 DENOTES BENCHMARK: SPIKE IN EASTERLY SIDE OF WOOD POST, NORTH END OF GATE. ELEV. = 1390.02 NAVD 88



SCALE IN FEET  
ORIENTATION OF THIS BEARING SYSTEM IS BASED ON CASS COUNTY COORDINATES, NORTH ZONE, NAD83(2007).



NO.	DATE	DESCRIPTION
1	12-22-2011	VOLUME CALCULATIONS

I HEREBY CERTIFY THAT THIS SURVEY PLAN OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

*Terry L. Freeman*  
TERRY L. FREEMAN  
21367  
LIC. NO. 21367



TOPOGRAPHIC SURVEY  
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JOB NO. 10-190  
DATE 12-22-2010  
SHEET NO. 1 OF 1